Landbird Monitoring Protocol for Klamath Network Parks

Standard Operating Procedure (SOP) #8: Conducting Vegetation Surveys

Version 1.0

Revision History Log:

Previous Version	Revision Date	Author	Changes Made	Reason for Change	New Version

This SOP consists of instructions for conducting the vegetation survey. The Vegetation Survey Form is provided at the end of this SOP.

Introduction

This is a system for assessing habitat characteristics in an efficient and timely fashion at landbird monitoring stations. Using the relevé methodology, the information collected will provide enough data to describe the vegetation formation, association, and structure. The data have some logical relationship with bird requirements for feeding or nesting. The method provides enough quantitative information for correlative analyses and ordinations. It is flexible so that it can be applied to any vegetation formation, including deserts, grasslands, and forests. This method follows recommendations put forth in Ralph and Bingham (2004).

Timing of the Survey

Typically, vegetation surveys should be conducted at stations along point count routes during the afternoon preceding the point count survey for that route. If an observer has completed the route in the past and is familiar with the locations of each station, he or she may opt to complete the vegetation survey after completing the point count survey if it is logistically advantageous. At the Oregon Caves banding station, the vegetation surveys should be completed once in June or July.

Location of the Survey

A 50 m plot is established, centered at a point count station or net location.

Conducting the Survey

Begin by walking around the point and identifying the species that make up the major structural components of the habitat. Determine the number of major layers of vegetation within your relevé by their dominant growth form: tree (T), shrub (S), herb (H), and moss (M). The classification of the T, S, H, and M layers does not limit the species which will be assigned to the

layers (e.g., only trees in the T layer). This process merely attempts to describe the structure of the vegetation.

In a forest with all layers, the tree layer is the uppermost stratum, dominated by mature trees. It may be a single layer or consist of two or more sublayers recognizable by marked changes in density and canopy status (see below). The shrub layer is dominated by shrubs or small trees. The herb layer is dominated by low growing plants, typically non-woody, although seedlings and other shorter trees and shrubs may be present. The moss layer is dominated by such plants as mosses, lichens, and liverworts. Bare ground and litter are ignored for this classification scheme.

For purposes of bird-habitat association, only species of trees and shrubs need be identified and recorded in the data below. For other plants, a generic name such as FERN, HERB, MOSS, LICH, will suffice. Moss (MOSS), lichen (LICH), and mistletoe (MIST) should be recorded in all layers in which they occur. If a plant cannot be identified in the field, bring it back to be keyed out later. Do this only if the plant makes up a significant part of the relevé(s). All snags within the plot are counted according to size class.

It is important that the total time spent taking information not exceed 15 minutes. In simple, one-layered, open vegetation sites, it can easily take less than 10 minutes per station. If you are taking longer than this, you are probably debating too much over minor details, especially layers of trees.

Completing the Field Form

Location

First complete the data under the location heading of the field form as follows:

Page: The page number of current page and the total pages for the survey route.

State: The two letter abbreviation for the state where the field site is located.

Project/Region: The code for the project, NPLTM.

Site Code: The code for the point count route or mist net site.

Site Name: The name of the survey route or mist net site.

Point: The station or point number where the relevé was conducted.

Split: Yes (Y) if plot was split, No (N) if plot was not split.

Observer: The first, middle, and last name initials of the observer.

Easting: The six number Universal Transverse Mercator (UTM) Easting value taken from a map or handheld Global Positioning System (GPS) unit.

Northing: The seven number UTM Northing value taken from a map or handheld GPS unit.

+/-: The accuracy, in meters, of the UTM coordinates taken from the GPS unit or estimated from a map.

Month-Day-Year: The date of the survey using two numbers for month and day and four numbers for year.

Plot Radius (m): The radius of the plot, which will always be 50 m.

B/U: B = Recently burned vegetation (e.g., scorched shrubs, trees with brown leaves still on branches, etc.) with greater than 10% cover within the plot. UB = Plot is unburned or with less than 10% burned vegetation.

R/U: R = Riparian plant species comprise a minimum of 5% of the plot radius. U = Plot radius is not composed of at least 5% riparian plant species.

Water: Recorded as '+' if water is present within the plot radius or ' - ' if there is no water in the plot. Permanent or semi-permanent sources of water are recorded (e.g., flowing creeks, seeps, or ponds).

TYPE: The type of water present within 100 m of the plot center; F = Flowing water (e.g., river, stream, or creek), P = Pond, W = Wetland, L = Lake.

AREA: The size of the entire riparian area (includes contiguous riparian outside of the plot); 1 = less than 0.5 hectares, 2 = between 0.5 and 4 ha, 3 = >4 ha.

Location Notes: Describe any unusual site characteristics, problems encountered, or changes related to the location.

Vegetation

Complete the data under the vegetation heading of the field form. We consider that there are up to four vegetative layers (tree, shrub, herb, and moss) within each relevé. In addition, there can be one or more sublayers that comprise each vegetative layer. The following is a set of height classes used to separate vegetative layers. Heights are relative to the ground or fallen logs and height classes are used only as a guide and are not taken as absolute values.

Tree Layer: Trees and shrubs usually taller than 5 m.

Shrub Layer: Shrubs, small trees, and tall herbs approximately between 50 cm to 5 m tall.

Herb Layer: Herbs, small shrubs, and very young trees 10 cm to 50 cm tall.

Moss Layer: Plants less than 10 cm high, on the ground or on fallen logs.

Total Cover (Tot. Cov.): For each of the four layers, estimate of all plants combined (i.e., up to 100% cover) using the Braun-Blanquet Cover Abundance Scale.
5 = >75 percent cover
4 = 51 - 75 percent cover
3 = 26 - 50 percent cover
2 = 5 - 25 percent cover
1 = numerous, but less than 5% cover or scattered with cover up to 5%
+ = few, with small cover
r = rare, solitary, with small cover

Height (Low and Upper): Recorded to the nearest meter for the tree layers and the nearest decimeter (0.1 m) for the shrub layers, the average height of the lower and upper bounds of each of the four primary layers.

Species (under height): Recorded as the species (use the four letter code - first two letters of the genus and the first two letters of the species) that is most common in the upper and lower limits of the layer.

DBH: For the tree layer, record the minimum and maximum diameter at breast height, to the nearest cm, of the smallest and largest tree in the layer.

Species (under DBH.): Recorded as the species of tree with maximum DBH and the species of tree with the minimum DBH.

Number of Sublayers (# SB): Recorded as the number of very obvious sublayers in each primary layer. Sublayers need not be recorded unless they are very obvious. Very rarely would there be more than two sublayers. The sublayers can be useful to the ecologist by providing a quick overview of the structure of a primary layer. They are primarily relevant to the tree layer, although sometimes are seen in the shrub layer. Sublayers are sometimes obvious when one species is shorter than the dominant species of the upper portion of the layer. In addition, sublayers are sometimes formed by two cohorts of one species, possibly related to some event. For example, a thick stand of young, 6 m Douglas-fir may include scattered, old, emergent individuals as well. Rarely, a third, lower layer of shade tolerant species is clear. If sublayers are present, they are obvious. Do not spend much time trying to see sublayers.

Composition

Next, complete the data under the composition heading of the field form as follows:

Species: Use the four letter code to record the plant species. It is important to use the standardized four letter code. If you are unsure of the species or proper code, please use the notes field to write an explanation and use a reference (e.g., http://plants.usda.gov/) to look up the correct code or species.

Sublayer: If no sublayers are present, only the primary layers (T, S, H) are used in the first row of the sublayer field. If sublayers are present, the primary layer letter on the top

is followed by a sublayer number (e.g., T1 [tallest trees], T2, S1, S2...) below it on the bottom in the same column.

Cover (under Sublayer): Use the Braun-Blanquet Cover Abundance Scale to record the percent cover that each species covers out of the entire circle. Since all the trees (or shrubs) in a primary layer can overlap, the total of all the species can add up to more than the total cover recorded above.

Vegetation Notes: Describe unknown or unique plant codes used. If you are unsure of a code or used a common name, please make a note of it here.

Snags: The number of snags according to size class (<14.9, 15-27.9, 28-63.9, 64-101.9, >102 cm DBH) should be recorded. They can be tallied while you are collecting data on the plot and then summed in the Count column.

References

Ralph, C. J., and B. Bingham. 2004. Instructions for completing the location and vegetation form: The releve technique. Redwood Sciences Laboratory, Arcata, CA.

SOP #8: Conducting Vegetation Surveys (continued).

LOCATION DATA

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STATE	PROJECT/REGION	SITE CODE	SITE NAME

POINT	SPLIT	OBSERVER	EASTING	NORTHING	+/- (m)

MONTH	DAY	YEAR	PLOT RADIUS (m)	WATER(+/-)	B/U	R/U	TYPE	AREA

LOCATION NOTES

LAYER	TOT. COV.	HEIGHT(m) LOW	SPECIES	UPPER	SPECIES	DBH(cm) MIN	SPECIES	MAX	SPECIES	# SB
~ >5m TREE										
~ .5-5m SHRUB										
~ .1-.5m HERB										
~ < .1m MOSS										

Cover Classes

5 = > 75%
4 = 50 - 75%
3 = 25 - 50%
2 = 5 -25%
1 = < 5%, numerous
+ = few
R = rare, solitary
0 = None

SPECIES COMPOSITION DATA

SPECIES	SUBLAYER	SPECIES	SUBLAYER

SNAGS

DBH (cm)	Tally	Count
< 14.9		
15-27.9		
28-63.9		
64-101.9		
> 102		

	INITIAL	DATE
PROOFED		
COPIED		
ENTERED		

VEGETATION NOTES

Observer's Full Name_____

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